

1. An improved crucible for containing a body of molten metal and for adding heat to offset thermal losses during transportation, said crucible comprised of:

(a) a bottom and sides joined together to contain said molten metal;
(b) a liner comprised of a refractory substantially inert to said molten metal;

(c) at least one pocket of a metal or metal alloy contained in said liner having a melting point above that of said molten metal; and

(d) means for heating said pocket of metal or metal alloy in said liner to a temperature about its melting point, said metal or metal alloy suited for transferring transformation heat to said body of molten metal during solidification, thereby maintaining said body of molten metal molten for an extended period.

2. The crucible in accordance with claim 1 wherein said molten metal is molten aluminum.

3. The improved crucible in accordance with claim 2 wherein the liner is comprised of a material selected from the group consisting of silicon carbide, silicon nitride, magnesium oxide, spinel, carbon and mixtures thereof.

4. The crucible in accordance with claim 1 wherein said metal alloy is comprised of Ag-Cu alloy.

5. The crucible in accordance with claim 1 wherein said metal alloy is comprised of Cu-Si alloy.

6. The crucible in accordance with claim 1 wherein said metal alloy is comprised of Ca-Si alloy.

7. The crucible in accordance with claim 1 wherein said metal alloy is comprised of Mg-Si alloy.

8. An improved crucible suitable for containing a body of molten aluminum and for adding heat to offset thermal losses during transportation, said crucible comprised of:

(a) a bottom and sides joined together to contain said molten aluminum;

(b) a liner comprised of a material substantially inert to said molten aluminum, said liner comprised of a material selected from the group consisting of silicon carbide, silicon nitride, magnesium oxide, spinel, carbon and mixtures thereof;

(c) at least one pocket of a metal or metal alloy contained in said liner having a melting point above that of molten aluminum;

(d) a series of heating element receptacles provided in said metal or metal alloy, said receptacles lined with a ceramic tube fabricated from a material selected from the group consisting of mullite, boron nitride, silicon nitride, silicon carbide, silicon aluminum oxynitride, zirconia, stabilized zirconia and mixtures thereof; and

(d) an electric heating element provided in said ceramic tube for heating said metal or metal alloy which is adapted to supply heat to the body of molten aluminum as said metal or metal alloy gives up heat of transformation.